WE CLAIM:

1. A modular prosthesis for repairing a tubular anatomical structure, comprising

a base member foldable radially between a collapsed configuration and an expanded configuration and extending longitudinally between a proximal end and a distal end,

a primary tubular limb foldable radially between a collapsed configuration and an expanded configuration and having a proximal end and a distal end, and

joining means for intraluminally joining said distal end of said primary limb to said proximal end of said base member.

2. The modular prosthesis as claimed in claim 1, wherein said joining means includes a friction fit engagement between said distal end of said primary limb in said expanded configuration and said proximal end of said base member in said expanded configuration.

3. The modular prosthesis as claimed in claim 1, wherein said primary limb has a first diameter at said proximal end and a second diameter less than said first diameter at said distal end.

4. The modular prosthesis as claimed in claim 3, wherein said diameter of said primary limb decreases from said proximal end toward said distal end at an angle of taper between about 2 degrees and about 15 degrees.

5. The modular prosthesis as claimed in claim 3, wherein said primary limb includes an annular sleeve at said distal end, said annular sleeve having a substantially uniform diameter.

6. The modular prosthesis as claimed in claim 3, wherein said primary limb has a diameter at said proximal end of between about 16 mm and about 36 mm in said expanded configuration and a diameter at said distal end of between about 16 mm and about 25 mm in said expanded configuration.

7. The modular prosthesis as claimed in claim 1, wherein said primary limb has a length from said proximal end to said distal end of between about 6 cm and about 15 cm.

8. The modular prosthesis as claimed in claim 1, further comprising securing means at said proximal end of said primary limb for securing said primary limb to said tubular anatomical structure.

9. The modular prosthesis as claimed in claim 1, wherein said base member has a first diameter at said proximal end and a second diameter greater than said first diameter at said distal end.

10. The modular prosthesis as claimed in claim 9, wherein said base member includes an annular sleeve at said proximal end, said annular sleeve having a substantially uniform diameter.

11. The modular prosthesis as claimed in claim 10, wherein said annular sleeve of said base member has a length between about 2 cm and about 15 cm.

12. The modular prosthesis as claimed in claim 9, wherein said base member has a diameter at said proximal end of between about 16 mm and about 25 mm in said expanded configuration.

13. The modular prosthesis as claimed in claim 1, wherein each of said base member and said primary limb includes a flexible layer and an expandable stent radially supporting said flexible layer along substantially the entire length thereof.

14. The modular prosthesis as claimed in claim 13, wherein said expandable stent is formed from a high shape-memory material.

15. The modular prosthesis as claimed in claim 13, wherein said expandable stent is formed from a low shape-memory material.

16. The modular prosthesis as claimed in claim 1, wherein said base member includes dividing means for forming first and second passageways

communicating between said proximal and distal ends of said base member.

17. The modular prosthesis as claimed in claim 16, further comprising

a secondary tubular limb foldable radially between a collapsed configuration and an expanded configuration and having a proximal end and a distal end, and

connecting means for connecting said proximal end of said secondary limb to said distal end of said base member.

18. The modular prosthesis as claimed in claim 17, further comprising

another secondary tubular limb foldable radially between a collapsed configuration and an expanded configuration and having a proximal end and a distal end, and

attaching means for attaching said proximal end of said another secondary limb to said distal end of said base member.

19. The modular prosthesis as claimed in claim 16, wherein said dividing means includes a line of stitching joining one surface of said base member to another surface of said base member opposite said one surface.

20. The modular prosthesis as claimed in claim 16, wherein said dividing means includes a web of material arranged longitudinally inside said base member, said web of material defining a first substantially round aperture adjacent said distal end of said base member and a second substantially round aperture at a spaced distance from said distal end of said base member.

21. A modular prosthesis for repairing a tubular anatomical structure, comprising

a base member foldable radially between a collapsed configuration and an expanded configuration and having a proximal end and a distal end,

a primary tubular limb foldable radially between a collapsed configuration and an expanded configuration and having a proximal end and a distal end,

joining means for intraluminally joining said distal end of said primary limb to said proximal end of said base member,

at least one secondary tubular limb foldable radially between a collapsed configuration and an expanded configuration and having a proximal end and a distal end, and

connecting means for connecting said proximal end of said secondary limb to said distal end of said base member.

22. The modular prosthesis as claimed in claim 21, wherein said connecting means includes a friction fit engagement between said proximal end of said secondary limb in said expanded configuration and said distal end of said base member in said expanded configuration.

23. The modular prosthesis as claimed in claim 21, wherein said base member includes a main leg on said proximal end thereof and first and second legs on said distal end thereof, said main leg extending in an axial direction and having a main bore extending longitudinally therein and defining an inlet on a free end thereof, said first leg oriented at a first angle to said axial direction and having a first bore extending longitudinally therein and communicating with said main bore, said first leg defining a first outlet on a free end thereof, and said second leg oriented at a second angle to said axial direction and having a second bore extending longitudinally therein and communicating with said main bore, said second leg defining a second outlet on a free end thereof.

24. The modular prosthesis as claimed in claim 23, wherein said base member includes a first distance between said inlet and said first outlet and a

second distance between said inlet and said second outlet, said first distance being larger than said second distance.

25. The modular prosthesis as claimed in claim 23, wherein each of said first and second angles are between about 10 degrees and about 60 degrees.

26. The modular prosthesis as claimed in claim 25, wherein said first angle is different than said second angle.

27. The modular prosthesis as claimed in claim 23, wherein said main leg is oriented in a primary plane, and at least one of said first and second legs is oriented in a plane different than said primary plane.

28. The modular prosthesis as claimed in claim 23, wherein said first leg has a substantially uniform diameter of between about 10 mm and about 25 mm in said expanded configuration.

29. The modular prosthesis as claimed in claim 23, wherein said base member includes a crotch defined between said first and second legs, and said first leg has a length between said crotch and said first outlet of between about 2 cm and about 15 cm.

30. The modular prosthesis as claimed in claim 23, wherein said second leg has a diameter which decreases in size from said second outlet toward said main leg.

31. The modular prosthesis as claimed in claim 23, further comprising another secondary tubular limb foldable radially between a collapsed configuration and an expanded configuration and having a proximal end and a distal end, and attaching means for attaching said proximal end of said another secondary limb to said distal end of said base member.

32. The modular prosthesis as claimed in claim 21, wherein said secondary limb has a substantially uniform diameter of between about 10 mm and about 25 mm in said expanded configuration.

33. The modular prosthesis as claimed in claim 21, wherein said proximal end of said secondary limb has a first diameter and said distal end of said secondary limb has a second diameter different than said first diameter.

34. The modular prosthesis as claimed in claim 21, wherein said secondary limb has a length between said proximal end and said distal end of between about 4 cm and about 15 cm.

35. The modular prosthesis as claimed in claim 21, further comprising another secondary tubular limb foldable radially between a collapsed configuration and an expanded configuration and having a proximal end and a distal end, and attaching means for attaching said proximal end of said another secondary limb to said distal end of said base member.

36. The modular prosthesis as claimed in claim 35, wherein said another secondary limb has a substantially uniform diameter of between about 10 mm and about 25 mm in said expanded configuration.

37. The modular prosthesis as claimed in claim 35, wherein said another secondary limb has a first diameter at said proximal end and a second diameter at said distal end different than said first diameter.

38. The modular prosthesis as claimed in claim 35, wherein said another secondary limb has a length between said proximal end and said distal end of between about 4 cm and about 15 cm.

39. The modular prosthesis as claimed in claim 21, wherein each of said base member and said primary and secondary limbs includes a flexible layer and an expandable stent radially supporting said flexible layer along substantially the entire length thereof.

40. A modular prosthesis for repairing a tubular anatomical structure, comprising

a base member extending longitudinally between a proximal end defining an inlet and a distal end defining first and second outlets, said base member being foldable radially between a collapsed configuration and an expanded configuration,

a primary tubular limb having a proximal end and a distal end and being foldable radially between a collapsed configuration and an expanded configuration, said distal end of said primary limb in said expanded configuration being matable in overlapping circumferential engagement with said inlet of said base member when said base member is in said expanded configuration to join said primary limb to said base member, and

at least one secondary tubular limb having a proximal end and a distal end and being foldable radially between a collapsed configuration and an expanded configuration, said proximal end of said at least one secondary limb being matable in overlapping circumferential engagement with one of said first and second outlets of said base member when said base member is in said expanded configuration to join said at least one secondary limb to said base member.

41. The modular prosthesis as claimed in claim 40, further comprising another secondary tubular limb having a proximal end and a distal end and being foldable radially between a collapsed configuration and an expanded configuration, said proximal end of said another secondary limb being matable in overlapping circumferential engagement with another of said first and second outlets of said base member when said base member is in said expanded configuration to join said another secondary limb to said base member.

42. A prosthesis for repairing a tubular anatomical structure, comprising

a hollow tubular body constructed from a woven fabric and having a length defined between a first end and a second end, said first end having a first diameter

and said second end having a second diameter, said body having a diameter intermediate said first and second ends which is less than at least one of said first and second diameters.

43. The prosthesis as claimed in claim 42, wherein said first diameter is less than said second diameter.

44. The prosthesis as claimed in claim 42, wherein said first end of said body has a diameter between about 16 mm and about 25 mm and said second end of said body has a diameter between about 16 mm and about 36 mm.

45. The prosthesis as claimed in claim 42, wherein said diameter of at least a portion of said body increases in size at an angle of taper between about 2 degrees and about 15 degrees.

46. The prosthesis as claimed in claim 45, wherein said angle of taper is about 4 degrees.

47. The prosthesis as claimed in claim 42, wherein said length of said body is between about 6 cm and about 15 cm.

48. The prosthesis as claimed in claim 42, wherein said body includes an annular sleeve integrally formed at one of said first and second ends, said annular sleeve having a substantially uniform diameter.

49. The prosthesis as claimed in claim 42, further comprising an expandable stent assembled to said body and radially supporting said body along substantially the entirety of said length.

50. The prosthesis as claimed in claim 49, wherein said expandable stent is formed from a high shape-memory material.

51. The prosthesis as claimed in claim 49, wherein said expandable stent is formed from a low shape-memory material.

52. The prosthesis as claimed in claim 49, wherein said expandable stent is assembled in the interior of said body.

53. The prosthesis as claimed in claim 49, wherein said expandable stent is assembled on the exterior of said body.

54. The prosthesis as claimed in claim 42, wherein said intermediate diameter is less than both said first and second diameters.

55. A method for repairing a tubular anatomical structure having a proximal branch and a pair of distal branches projecting from said proximal branch at a point of bifurcation, said method comprising the steps of:

providing a first tubular limb foldable radially between a collapsed configuration and an expanded configuration and having a proximal end and a distal end,

providing a base member foldable radially between a collapsed configuration and an expanded configuration and having an inlet and first and second outlets,

providing a primary tubular limb foldable radially between a collapsed configuration and an expanded configuration and having a proximal end and a distal end,

feeding said first limb in said collapsed configuration through one of said distal branches until said proximal end of said first limb is positioned adjacent said point of bifurcation, and said distal end of said first limb is positioned within said one of said distal branches,

expanding said first limb from said collapsed configuration to said expanded configuration whereupon said first limb engages and becomes secured within said one of said distal branches,

feeding said base member in said collapsed configuration through said one of said distal branches and said first limb until said inlet is positioned in said proximal branch, said first outlet is positioned within said proximal end of said first limb, and said

second outlet is at least partially aligned with another one of said distal branches,

expanding said base member from said collapsed configuration to said expanded configuration, whereupon said first outlet engages said proximal end of said first limb in friction fit circumferential contact to join said first outlet of said base member to said first limb,

feeding said primary limb in said collapsed configuration through one of said distal branches and one of said first and second outlets of said base member until said proximal end of said primary limb is positioned in said proximal branch and said distal end of said primary limb is positioned within said inlet of said base member, and

expanding said primary limb from said collapsed configuration to said expanded configuration, whereupon said distal end of said primary limb engages said inlet in friction fit circumferential contact to join said primary limb to said inlet of said base member and said proximal end of said primary limb engages and becomes secured within said proximal branch.

56. The method as claimed in claim 55, further comprising the steps of:

providing a second tubular limb foldable radially between a collapsed configuration and an expanded configuration and having a proximal end and a distal end,

feeding said second limb in said collapsed configuration through said another one of said distal branches until said proximal end of said second limb is positioned within said second outlet of said base member and said distal end of said second limb is positioned within said another one of said distal branches, and

expanding said second limb from said collapsed configuration to said expanded configuration, whereupon said proximal end of said second limb engages said second outlet of said base member in friction fit

circumferential contact to join said second limb to said second outlet of said base member and said distal end of said second limb engages and becomes secured within said another one of said distal branches.

57. The method as claimed in claim 55, wherein said steps of feeding and expanding said second limb occur prior to said steps of feeding and expanding said primary limb.

58. A method for repairing a tubular anatomical structure having a proximal branch and a pair of distal branches projecting from said proximal branch at a point of bifurcation, said method comprising the steps of:

providing a base member foldable radially between a collapsed configuration and an expanded configuration and having an inlet and first and second outlets,

providing a primary tubular limb foldable radially between a collapsed configuration and an expanded configuration and having a proximal end and a distal end,

feeding said base member in said collapsed configuration through one of said distal branches until said inlet is positioned in said proximal branch, said first outlet is positioned within said one of said distal branches, and said second outlet is at least partially aligned with another one of said distal branches,

expanding said base member from said collapsed configuration to said expanded configuration, whereupon said first outlet engages and becomes secured within said one of said distal branches,

feeding said primary limb in said collapsed configuration through one of said distal branches and one of said first and second outlets of said base member until said proximal end of said primary limb is positioned in said proximal branch and said distal end

of said primary limb is positioned within said inlet of said base member, and

expanding said primary limb from said collapsed configuration to said expanded configuration, whereupon said distal end of said primary limb engages said inlet in friction fit circumferential contact to join said primary limb to said base member and said proximal end of said primary limb engages and becomes secured within said proximal branch.

59. The method as claimed in claim 58, further comprising the steps of:

providing a first tubular limb foldable radially between a collapsed configuration and an expanded configuration and having a proximal end and a distal end,

feeding said first limb in said collapsed configuration through said another one of said distal branches until said proximal end of said first limb is positioned within said second outlet of said base member and said distal end of said first limb is positioned within said another one of said distal branches, and

expanding said first limb from said collapsed configuration to said expanded configuration, whereupon said proximal end of said first limb engages said second outlet of said base member in friction fit circumferential contact to join said first limb to said second outlet of said base member and said distal end of said first limb engages and becomes secured within said another one of said distal branches.

60. A method for repairing a tubular anatomical structure having a proximal branch and a pair of distal branches projecting from said proximal branch at a point of bifurcation, said method comprising the steps of:

providing a primary tubular limb foldable radially between a collapsed configuration and an expanded configuration and having a proximal end and a distal end,

providing a base member foldable radially between a collapsed configuration and an expanded configuration and having a proximal end and a distal end,

feeding said primary limb in said collapsed configuration through one of said distal branches until said primary limb is positioned entirely in said proximal branch,

expanding said primary limb from said collapsed configuration to said expanded configuration, whereupon said primary limb engages and become secured within said proximal branch,

feeding said base member in said collapsed configuration through one of said distal branches until said proximal end of said base member is positioned within said distal end of said primary limb, and

expanding said base member from said collapsed configuration to said expanded configuration, whereupon said proximal end of said base member engages said distal end of said primary limb in friction fit circumferential contact to join said base member to said primary limb.

61. The method as claimed in claim 60, wherein said step of feeding said base member includes the step of positioning said base member so that said distal end thereof rests upon said point of bifurcation when said base member is joined to said primary limb.

62. The method as claimed in claim 60, wherein said base member includes first and second passageways providing communication between said proximal and distal ends, said method further comprising the steps of:

providing a first tubular limb foldable radially between a collapsed configuration and an expanded configuration and having a proximal end and a distal end,

feeding said first limb in said collapsed configuration through one of said distal branches until

said proximal end of said first limb is positioned within one of said first and second passageways of said base member and said distal end of said first limb is positioned within said one distal branch, and

expanding said first limb from said collapsed configuration to said expanded configuration, whereupon said proximal end of said first limb engages said one of said first and second passageways of said base member in friction fit circumferential contact to join said first limb to said base member and said distal end of said first limb engages and becomes secured within said one distal branch.

63. The method as claimed in claim 62, further comprising the steps of:

providing a second tubular limb foldable radially between a collapsed configuration and an expanded configuration and having a proximal end and a distal end,

feeding said second limb in said collapsed configuration through another one of said distal branches until said proximal end of said second limb is positioned within another one of said first and second passageways of said base member and said distal end of said second limb is positioned within said another one of said distal branches, and

expanding said second limb from said collapsed configuration to said expanded configuration, whereupon said proximal end of said second limb engages said another one of said first and second passageways of said base member in friction fit circumferential contact to join said second limb to said base member and said distal end of said second limb engages and becomes secured within said another one of said distal branches.

64. A method for repairing a tubular anatomical structure having a proximal branch and a pair of distal branches projecting from said proximal branch at a point of bifurcation, said method comprising the steps of:

providing a component foldable radially between a collapsed configuration and an expanded configuration and having a proximal end with a first diameter and a distal end with a second diameter, and a diameter intermediate said proximal and distal ends which is less than at least one of said first and second diameters,

feeding said component in said collapsed configuration through one of said distal branches until said component is positioned entirely in said proximal branch, and

expanding said component from said collapsed configuration to said expanded configuration, whereupon said component engages and becomes secured within said proximal branch.

65. The method as claimed in claim 64, wherein said component includes first and second passageways providing communication between said proximal and distal ends, said method further comprising the steps of:

providing a first tubular limb foldable between a collapsed configuration and an expanded configuration and having a proximal end and a distal end,

feeding said first limb in said collapsed configuration through one of said distal branches until said proximal end of said first limb is positioned within one of said first and second passageways of said component and said distal end of said first limb is positioned within said one of said distal branches, and

expanding said first limb from said collapsed configuration to said expanded configuration, whereupon said proximal end of said first limb engages within said one of said first and second passageways of said component in friction fit circumferential contact to join said first limb to said component and said distal end of said first limb engages and becomes secured within said one of said distal branches.

66. The method as claimed in claim 65, further comprising the steps of:

providing a second tubular limb foldable radially between a collapsed configuration and an expanded configuration and having a proximal end and a distal end,

feeding said second limb in said collapsed configuration through another one of said distal branches until said proximal end of said second limb is positioned within another one of said first and second passageways of said component and said distal end of said second limb is positioned within said another one of said distal branches, and

expanding said second limb from said collapsed configuration to said expanded configuration, whereupon said proximal end of said second limb engages within said another one of said first and second passageways of said component in friction fit circumferential contact to join said second limb to said component and said distal end of said second limb engages and becomes secured within said another one of said distal branches.